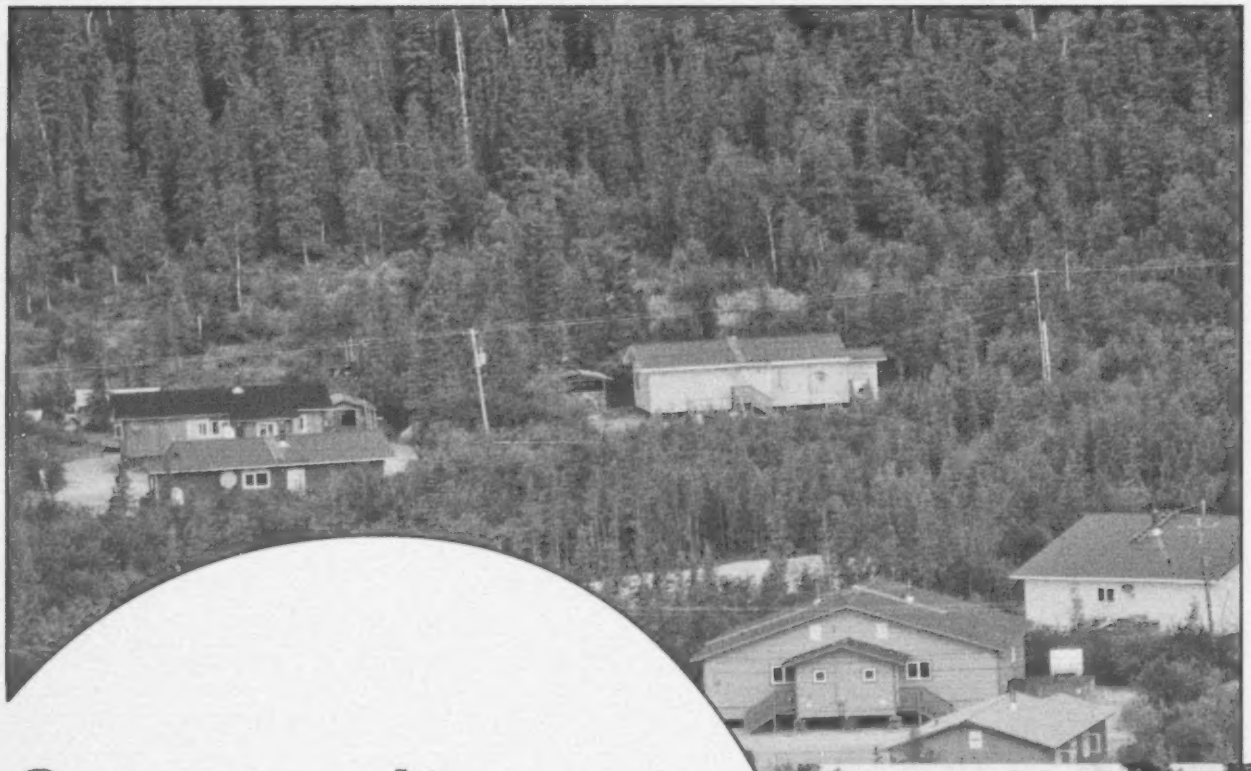

# Community Energy Planning in Yukon: Determining Priorities of Local Governments

energy solutions centre

Yukon
Energy, Mines and Resources

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- First Nation of Na'Cho Nyäk Dun
- Vuntut Gwitchin First Nation
- Tr'ondëk Hwëch'in
- Teslin Tlingit Council

### *Societies:*

- Association of Yukon Communities
- Yukon Conservation Society

### *Government of Yukon branches:*

- EMR Land Management Branch
- EC Regional Economic Development Branch
- CS Community Affairs Branch

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# Introduction

Community energy planning is an emerging thread in Canada's approach to sustainable community development. Municipalities across the country are researching and developing energy plans to manage energy consumption, curb energy spending, progressively respond to new demand, and take advantage of emerging technological and infrastructure renewal opportunities that ensure community development meets the increasing standards of residents and businesses for healthy, comfortable, attractive and environmentally sound places to live and work. For example the Community Energy and Emissions Inventory Quickstart offered by BC Hydro, or the SMART energy community principles put forward by QUEST, provide rigorous arguments for why energy planning is a necessity for remote and northern communities.

Yukon has had an off-again/on-again relationship with community energy planning for almost three decades. The first community energy plan, *Community Energy Plan for Beaver Creek, Y.T.* was compiled by Acres International in 1987. A *Vuntut Gwitchin First Nation Strategic Energy Plan 2001-2005*, prepared by Morrison Management Consulting, followed in 2002. In 2005, with funding from Aboriginal and Northern Community Action Program (ANCAP), EDI Environmental Dynamics completed energy inventories for participating Yukon First Nations. Nine inventories were developed through the ANCAP program. These resources demonstrate that energy planning is of interest to Yukon, however, they also suggest an intermittent approach and changing priority for managing energy at the community scale.

The call for energy planning was renewed in 2011. That year Yukon First Nations expressed a need for community energy planning to improve energy literacy, empower residents through consultation, enable proactive energy policy development, and provide energy forecasts to decision-makers to foster future economic and infrastructure development in keeping with community needs. Yukon municipalities echoed this call shortly after and requested Yukon government support for decision-making in order to manage the rapidly rising costs of energy through planning.

The Government of Yukon Energy Branch responded to this call in 2012 as a part of the Faro Community Development Team. The resulting *Town of Faro Community Energy Plan* was released in 2013. Since 2013 the Energy Branch has continued to work with Yukon communities to interpret and manage energy costs and consumption at the community level through the Yukon Community Energy Plan Program. While interest exists, the implementation of this program suggests that the development of energy plans is expensive and time consuming, and could potentially create an administrative burden for communities if treated as an operational necessity.

Given such observations, and the intermittence of energy planning demand since 1987, the Energy Branch has undertaken an intensive program review to resolve this issue and ensure that Yukon communities get the program support that they need. This review provides a response to three broad questions:

- Are municipalities and First Nations familiar with and do they want energy planning?
- What do municipalities and First Nations need to meet their community energy planning needs?
- Are Yukon municipalities and First Nations able to implement energy plans once completed?

Six municipalities, four First Nations, three government departments and two societies responded to the questionnaire that was circulated. The questionnaire constituted 17 questions within the three broader areas of enquiry. This report provides a synthesis of those responses and direction to the Energy Branch on how to provide appropriate support for energy planning going forward.

# Confirming the need for energy planning in Yukon

The representatives of participating governments were first asked to state their familiarity with energy planning, how they thought energy planning would support their community, and confirm that energy planning could support community operations without adding to capacity or resource limitations.

In general ten participants (62 per cent) had heard of energy planning. Of the remaining participants, two (13 per cent) had not heard of energy planning in Yukon, but had participated in or were familiar with energy planning in the Northwest Territories. Two (per cent) participants had not heard of energy planning but were receptive to the idea. One participant (7 per cent) had heard of energy planning but did not anticipate an immediate need for it citing a significant number of energy projects already under investigation and little capacity to take on a new project.

The feedback from local governments emphasized the prominence of energy issues in the communities, the technical nature of these issues, and the expense required to address them. While most felt that a strategic approach to addressing the complex issues associated with community energy use was sound, in addition to involving the public in the resolution of those issues, there was some concern that "too many plans" would emerge reducing the benefits of energy planning. Some other observations provided by participants were:

- Energy is fundamental to all the services provided by a community including fuel delivery, heat and light. It is also one of the biggest costs a municipality faces.
- Energy planning could be a good tool for reducing greenhouse gas emissions through the evaluation of long-term land development strategies.
- A technical inventory of energy consumption is useful for clearly defining issues and moving them forward, making it easier to:
    - Collaborate with partners to negotiate action.
    - Target management philosophies rather than individual behaviour.
    - Co-ordinate between governments.

- Direct outreach to the community through plan development makes it possible to:
  - Improve energy literacy through outreach.
  - Work with people to champion how to improve their energy efficiency (residential).
  - Obtain meaningful/effective community buy-in.
  - Articulate and understand residential energy issues (for example: ensuring the accessibility of wood).

Insights were also provided by participants that inform how an energy plan could best serve the communities. As anticipated, given the wide range of issues that energy influences, the responses were far ranging. In general participants felt that plans should provide strategic direction to manage energy related costs over the near term. To accomplish this task plans should focus on improving efficiency, managing interconnection issues, and alleviating existing pressures. More specifically participants felt that an energy plan should address:

- Transportation (improving efficiency and providing new opportunities for active transportation).
- Housing quality and efficiency.
- Grid connectivity (managing transmission issues, preventing blackouts, and establishing methods for integrating new infrastructure into old).
- Heat (fuel management and improving efficiency).
- Cost management (reducing operating costs and managing the cost of new infrastructure including the evaluation of lifecycle costs).
- Energy portfolio development (including the identification of new independent power producer opportunities, using local resources for heat, and facilitating energy democracy).

# Energy planning needs in Yukon communities

The energy planning needs of Yukon communities were explored through a discussion of how the studies should be scoped. Through their feedback participants established a focus for energy planning, the composition of the report, and provided input into how a community energy plan should be formatted. In doing so, participants clearly articulated how an energy plan can support community operations, and avoid straining existing capacity.

It should be noted that participants were selective in their responses. The percentages provided reflect the total number of responses and not the total number of participants.

### *Community versus corporate energy planning*

Local governments first discussed the scope of the plan in terms of who the primary audience should be. Community energy plans elsewhere (e.g. British Columbia) normally include the residential, commercial, and industrial sectors. Plans that do not include these sectors are classed as "corporate" plans because they focus only on the assets and needs of the local government. BC Energy plans are also typically not inter-governmental (i.e. do not try to meet the administrative needs of First Nations and municipalities at the same time). The limited commercial and industrial sectors of most communities, when combined with the potential for the overlapping of needs of local governments, makes community energy plans in Yukon relatively unique. Half of respondents felt that an intergovernmental plan would be most appropriate, especially when an unincorporated community is nearby. The remaining 50 per cent reported that a corporate plan focusing on the needs of a single administration would be most useful. One of these participants noted that, while an intergovernmental process made sense, such planning exercises tended to be time consuming and sometimes led to a less effective plan than one prepared for individual governments.

Participants were also asked to discuss the merits of a community scope versus a "corporate" scope that would focus entirely on administrative operations. Participants were somewhat divided with regard to effectively consulting the commercial and industrial sectors of their communities.

Only 22 per cent felt that the commercial and industrial sectors should be included in the plan scope. Of the remaining participants, 44 per cent suggested that these sectors should be indirectly consulted, and 33 per cent suggested they should be excluded entirely. Exclusion of the commercial and industrial sectors was recommended either to accommodate the busy nature of local businesses or because they would be better served through the incentives and regulation that could be provided by the local government. Development of these incentives and regulation would necessitate input from the commercial and industrial sectors and engaging them at a later date.

Inclusion of the residential sector within the scope of an energy plan was broadly supported. Most (66 per cent) participants encouraged direct engagement of the residential sector through workshops, meetings, audits, learning opportunities, and "trade shows". Direct engagement and community outreach was important for informing residents about the energy efficient options available to them, the reasons for taking advantage of these options, and discussing any challenges that may be forthcoming. Administrative leadership was also cited as a reason for engaging the residential sector. Residential sector input was also considered integral to establishing the importance of quality housing in rural communities and the challenges of managing aging housing stock for administrations. One participant cautioned that a broad planning process must explicitly demonstrate the benefits of undertaking the development of a community energy plan for residents if an administration chose to engage them. The remainder of participants (33%) suggested residents would be better engaged through those departments responsible to them or through regulation targeted at the residential sector (zoning or by-laws).

### *Establishing a focus for Yukon community energy planning*

No clear focus for a community energy plan emerged from this discussion with Yukon municipalities and First Nations. Instead, participants provided a wide-ranging assessment of the complex and interrelated issues associated with community energy use, and confirmed that energy planning can be an important tool establishing a strategic approach to resolving such issues. These issues are:

- The mapping and spatial analysis of energy issues, given the simplicity of such resources for communicating complex issues, and provided such resources do not undermine progress on development issues if developable land is far away from community centres.

- Energy efficiency targets.
- Decreasing greenhouse gas emissions through reduced diesel generation and managing land use sustainably.
- Negotiated outcomes; including the facilitated review of potential policies and projects that meet the criteria or guiding principles established at the outset of the planning process.
- Clear analysis, including the provision of proprietary data from the utilities (assuming it can be acquired), to support recommendations.
- Cost-benefit analysis of options, including the types of energy conservation methods that could be incorporated into the community at a reasonable cost, or potential savings/revenues that may result.
- Capital planning and the identification of market opportunities.
- Long-term projections to inform decision-making and inform investment opportunities.
- A review of international case studies, best practices and policies to inform decision-making.
- Determining private sector expertise to support the implementation of recommendations.
- Big picture approaches to issues that emphasize local solutions.
- Training for energy system managers.
- Outreach and education for residents on energy efficiency products such as product support, the potential savings resulting from their use, and the broader benefits that can result.
- Timing implementation so that it is coordinated with budget development, the end of useful life of existing assets and infrastructure, etc.
- Active transportation opportunities and associated benefits, including the development of recreational amenities, and the greening of communities.
- Local food production to reduce transportation requirements and the accumulation of waste in the community, including the construction of greenhouses and community gardens, and improving the production of compost.
- Improving housing quality to ensure comfort and cost savings.
- Evaluating the potential for increased renewable energy generation, thereby reducing the consumption of diesel for generating electricity and heat, and fostering the uptake of supporting technologies such as smart grids and electric thermal storage.

A clear focus for an energy plan was not forthcoming from the review of energy planning with participants. However, all participants suggested that clear synergies exist between energy planning and the development of other community plans and strategies, including:

- Official community plans;
- Transportation plans;
- Local area plans;
- Integrated community sustainability plans;
- Strategic five-year plans;
- Capital and housing strategies; and
- Education strategies.

The utility of energy planning, including more effective implementation, can be increased by ensuring that clear and logical policies can be incorporated into these documents. Fostering clear and logical linkages with other plans is also important for managing the effort of communities when implementing the plan and will ensure the outcomes reflect community capacity.

### *Building a template for a Yukon energy plan*

As is evident from the preceding discussion, a community energy plan could require a comprehensive evaluation of a community's operations and budget, requiring a significant investment of time and resources by a First Nation government or municipality. From the outset participants were very clear that, to be valuable, the scope of a community energy plan must be managed to ensure it is accessible. They subsequently provided valuable direction on the length, data requirements, and level of complexity that a community energy plan should provide.

The majority of participants (82 per cent) advocated for a short plan. While the remaining 18 per cent considered a longer plan valuable, the established value was primarily to support technical decisions, and it was acknowledged that the added complexity could be acquired separately where required.

In a related question, participants were asked about their data needs, and whether the provision of raw data would be useful to them. Participants were divided, with 59 per cent supporting the provision of raw data, and 41 per cent stating they would request such data when and if it was needed. In one instance the participant suggested that a detailed plan, supported by a plain-language summary, would be necessary for effective operations and discussions.

All participants would be willing to share data about their operations to ensure a community energy plan was adequately rigorous to meet their needs.

All participants also suggested the development of fact sheets and/or communications materials that clearly defined the process, its benefits, and the results of the analysis, to plainly convey the value of the planning process to their leadership and to residents.

## The persistent challenge of implementation

Energy planning is not mandated by the Government of Yukon. As a result, local governments currently champion energy efficiency on their initiative, and are subsequently tasked with implementing the plans through their own resources. While most participating local governments reported that they would be willing to invest their own resources, assuming a reasonable business case was presented and after approval was received from council, additional resources are undeniably necessary to implement energy plans.

Participants reported a need for capital funds, professional expertise, and relationship development. None of the participants reported that they were working with partners to investigate energy efficiency. Most suggested they would rely on internal capacity and have utilized support from the Energy Branch and from the utilities in the past.

# Conclusions and Moving Forward

The feedback provided by local governments provides clear direction on the need for energy planning to manage the cost of energy infrastructure and fuel in Yukon communities. The suggested scope of a potential energy plan is broad and, and while it's unlikely that a single energy plan could meet all of the noted expectations, it's important to note that energy planning can support community operations in a number of ways. It will be important to design these studies with abundant input from local governments early on to ensure their needs are met.

The Government of Yukon will continue to work with our partners to develop an effective energy planning program based on the direction provided through the development of this report. This work could include the development of promotional materials to help local governments communicate the value of energy planning and provision of resources necessary to help them meet their needs. These resources may include energy inventories, energy demand projections, resources maps, and support with strategically evaluating energy related opportunities within brief and defensible plans.